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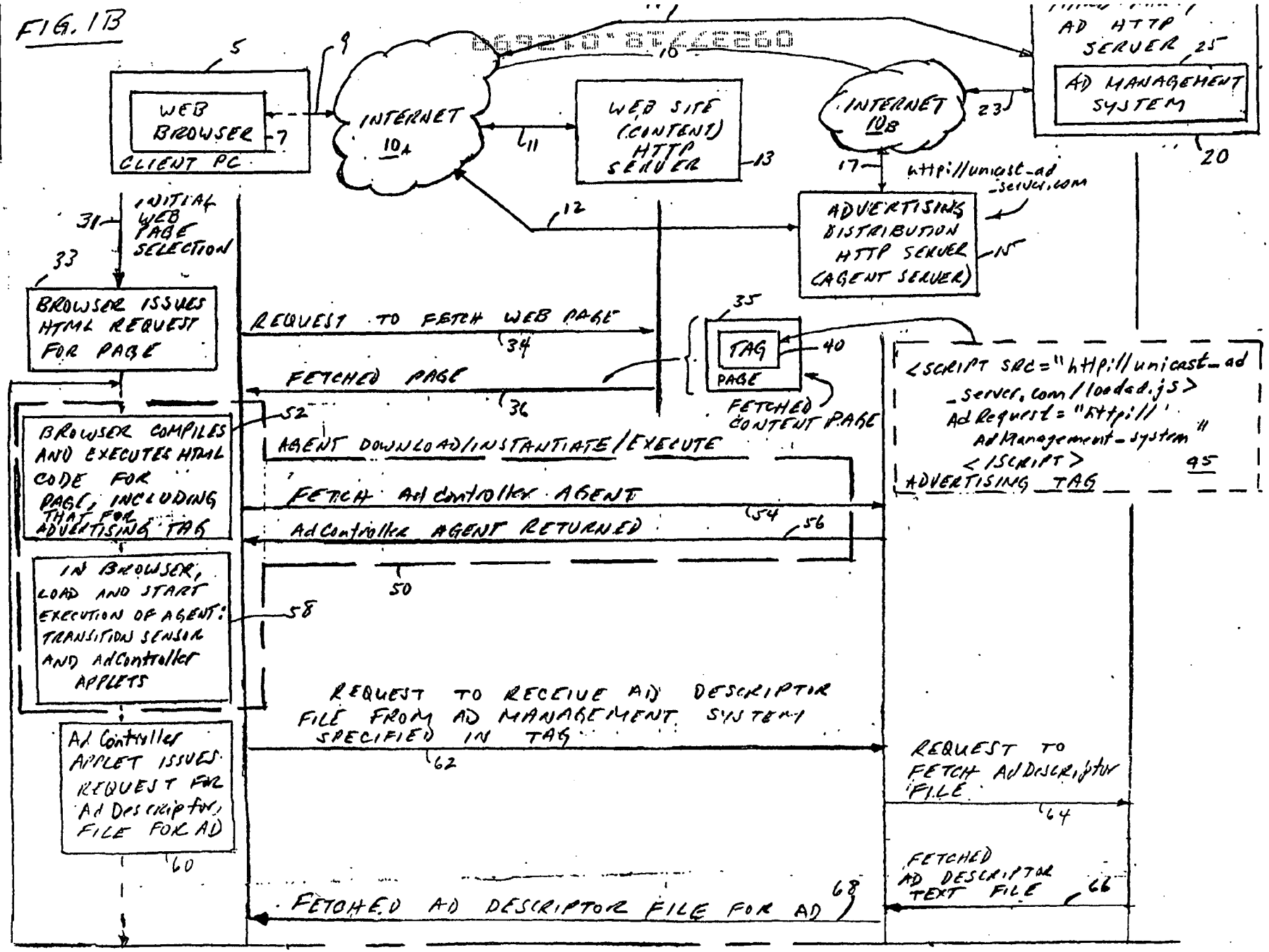
FIG. 1B


5
WEB BROWSER
7
CLIENT PC
9
INTERNET 10A
11
WEB SITE (CONTENT) HTTP SERVER
13
10
INTERNET 10B
23
AD HTTP SERVER
25
AD MANAGEMENT SYSTEM
20
17
http://unicast_ad_server.com
12
ADVERTISING DISTRIBUTION HTTP SERVER (AGENT SERVER)
15
31
INITIAL WEB PAGE SELECTION
33
BROWSER ISSUES HTML REQUEST FOR PAGE
REQUEST TO FETCH WEB PAGE
34
35
TAG
40
PAGE
FETCHED PAGE
36
FETCHED CONTENT PAGE
<SCRIPT SRC="http://unicast_ad_server.com/loaded.js>
Ad Request="http://Ad Management_system"
</SCRIPT>
45
ADVERTISING TAG
52
BROWSER COMPILES AND EXECUTES HTML CODE FOR PAGE, INCLUDING THAT FOR ADVERTISING TAG
AGENT DOWNLOAD/INSTANTIATE/EXECUTE
FETCH AdController AGENT
54
AdController AGENT RETURNED
56
50
IN BROWSER, LOAD AND START EXECUTION OF AGENT: TRANSITION SENSOR AND AdController APPLETS
58
REQUEST TO RECEIVE AD DESCRIPTOR FILE FROM AD MANAGEMENT SYSTEM SPECIFIED IN TAG
62
AdController APPLET ISSUES REQUEST FOR AD Description FILE FOR AD
60
REQUEST TO FETCH AD DESCRIPTOR FILE
64
FETCHED AD DESCRIPTOR TEXT FILE
66
FETCHED AD DESCRIPTOR FILE FOR AD
68

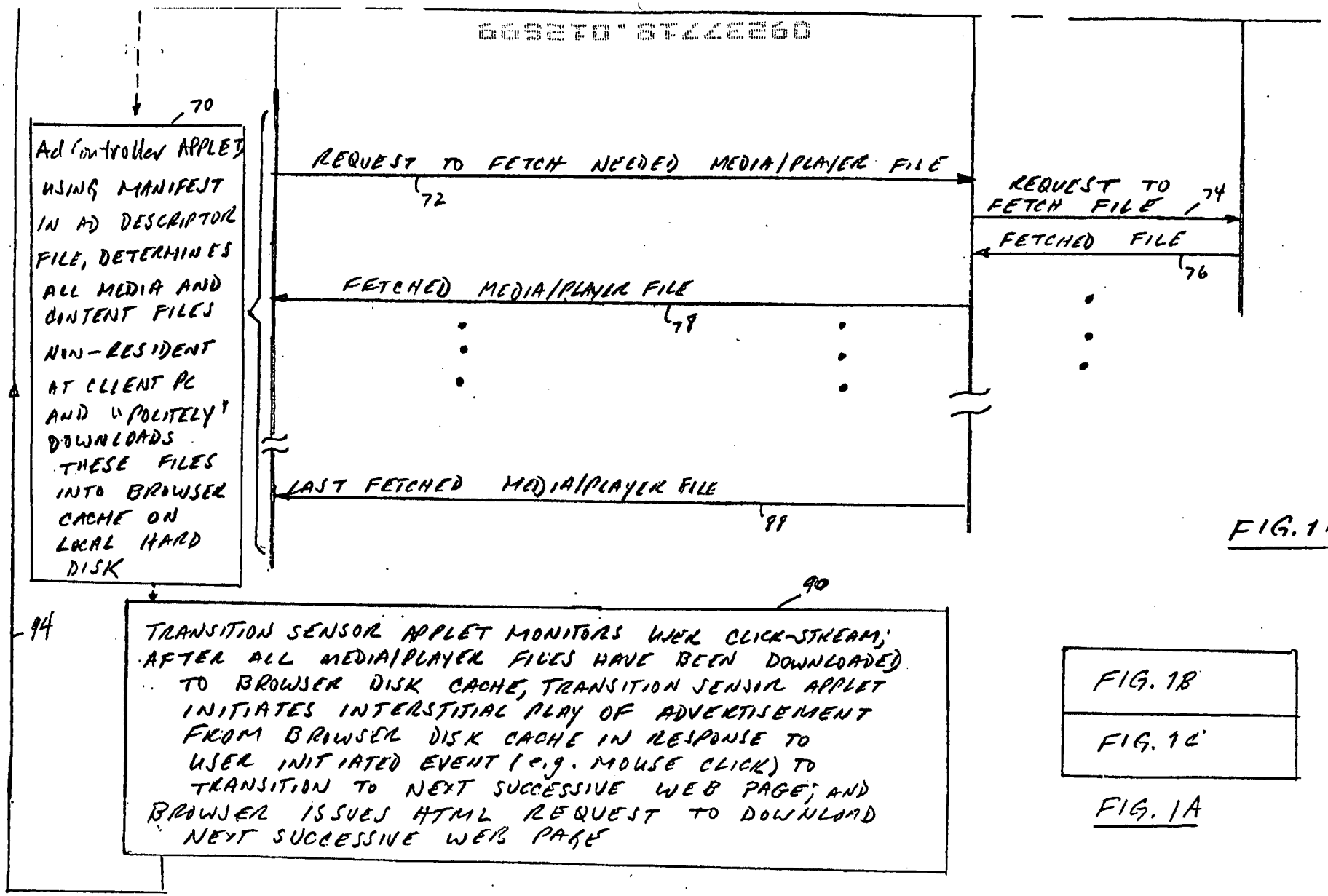
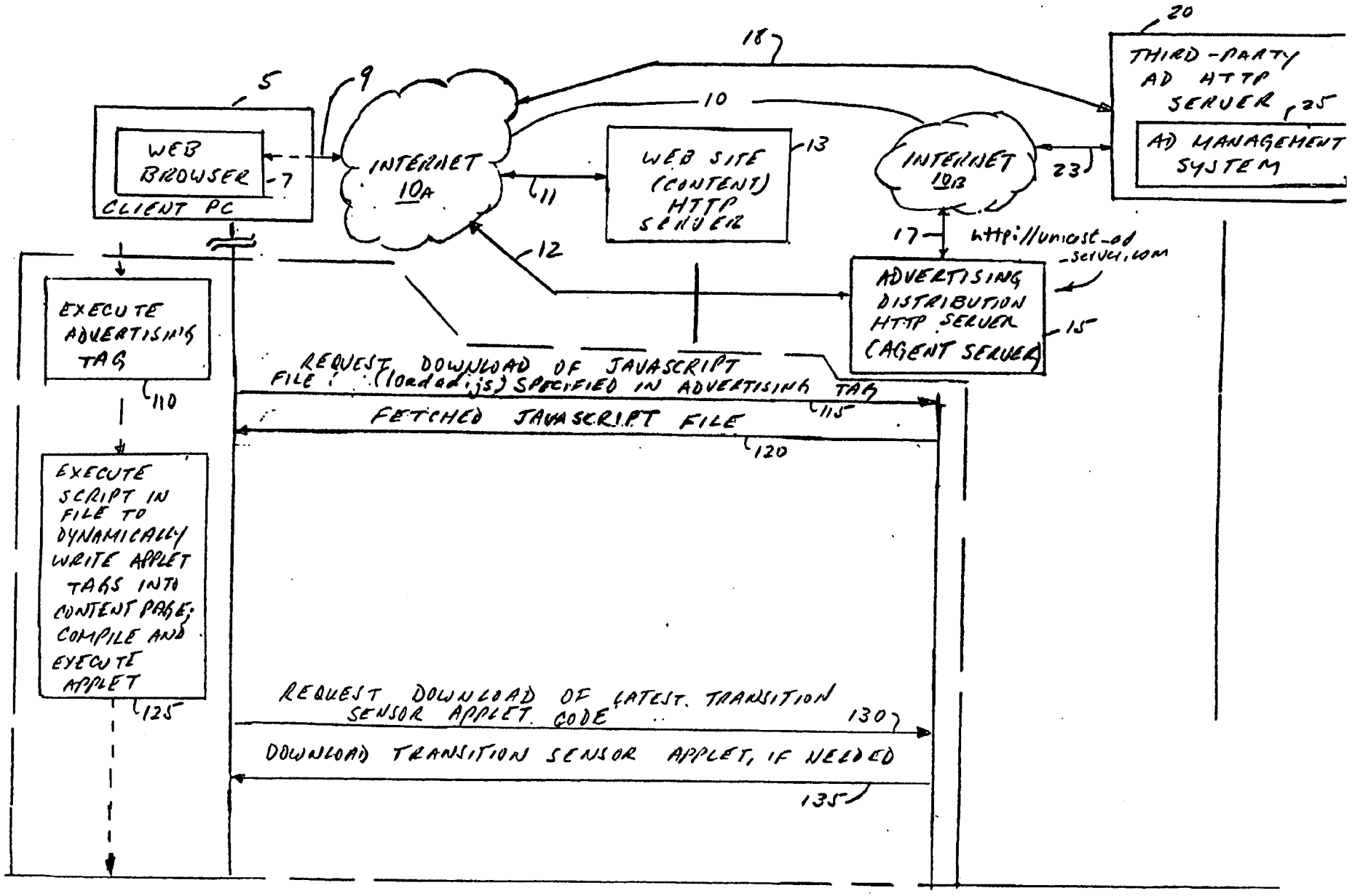


FIG. 1C

FIG. 1B
FIG. 1C'

FIG. 1A

FIG. 1E


5
9
18
20
THIRD-PARTY AD HTTP SERVER
25
AD MANAGEMENT SYSTEM
10
WEB BROWSER
7
CLIENT PC
INTERNET 10A
11
WEB SITE (CONTENT) HTTP SERVER
13
INTERNET 10B
23
12
17
http://unicast_ad_server.com
ADVERTISING DISTRIBUTION HTTP SERVER (AGENT SERVER)
15
EXECUTE ADVERTISING TAG
110
REQUEST DOWNLOAD OF JAVASCRIPT FILE (loadad.js) SPECIFIED IN ADVERTISING TAG
115
FETCHED JAVASCRIPT FILE
120
EXECUTE SCRIPT IN FILE TO DYNAMICALLY WRITE APPLET TAGS INTO CONTENT PAGE; COMPILE AND EXECUTE APPLET
125
REQUEST DOWNLOAD OF LATEST TRANSITION SENSOR APPLET CODE
130
DOWNLOAD TRANSITION SENSOR APPLET, IF NEEDED
135

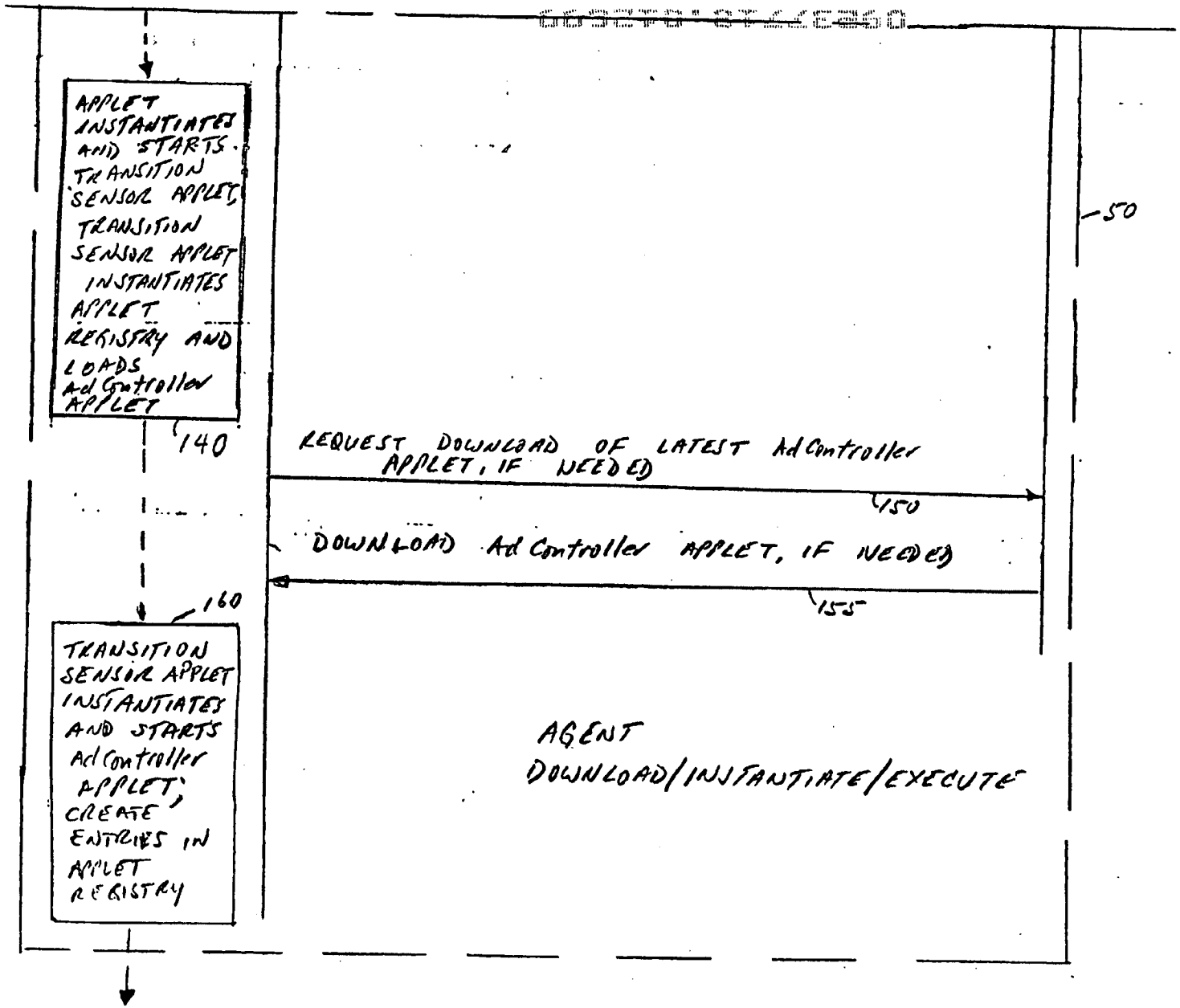


FIG. 1F

FIG. 1D

FIG. 1E
FIG. 1F

6,928,518 B2 Aug. 9, 2005

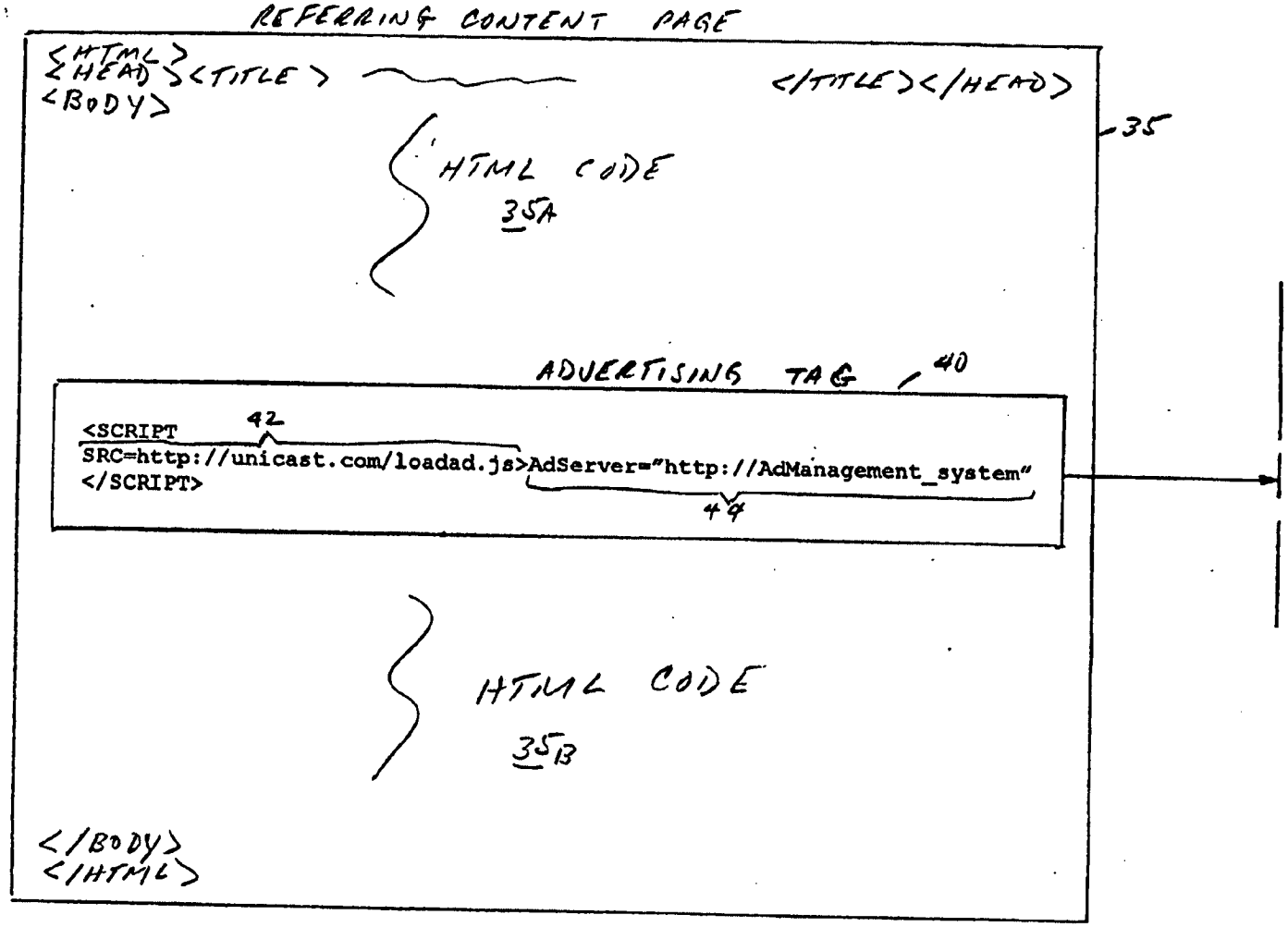


FIG. 2

FIG. 2A	FIG. 2B

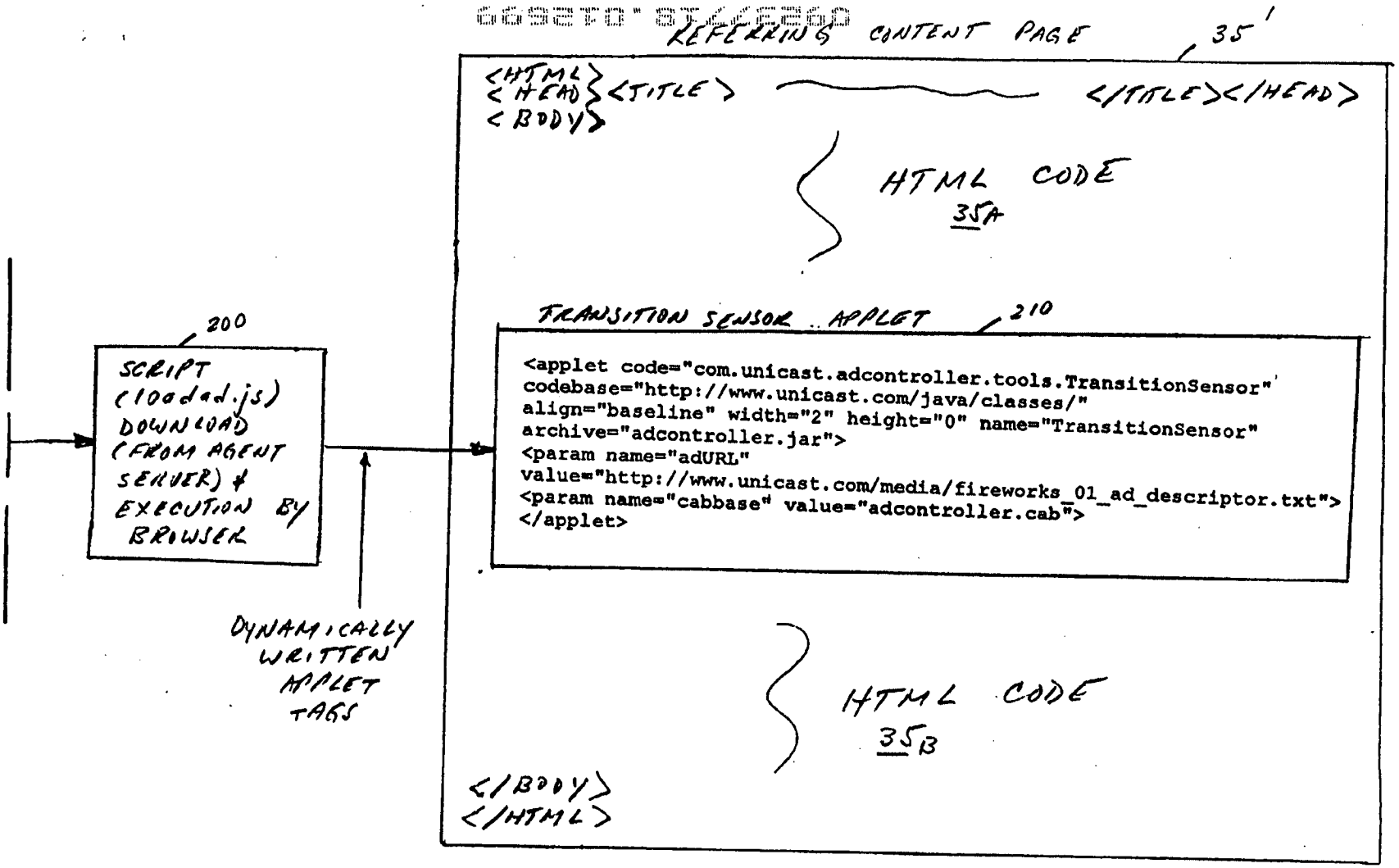

REFERRING CONTENT PAGE
35'
<HTML>
<HEAD> <TITLE> </TITLE></HEAD>
<BODY>
HTML CODE
35A
TRANSITION SENSOR APPLET
210
<applet code="com.unicast.adcontroller.tools.TransitionSensor"
codebase="http://www.unicast.com/java/classes/"
align="baseline" width="2" height="0" name="TransitionSensor"
archive="adcontroller.jar">
<param name="adURL"
value="http://www.unicast.com/media/fireworks_01_ad_descriptor.txt">
<param name="cabbase" value="adcontroller.cab">
</applet>
200
SCRIPT
(loadad.js)
DOWNLOAD
(FROM AGENT
SERVER) &
EXECUTION BY
BROWSER
DYNAMICALLY
WRITTEN
APPLET
TAGS
HTML CODE
35B
</BODY>
</HTML>

FIG. 2B

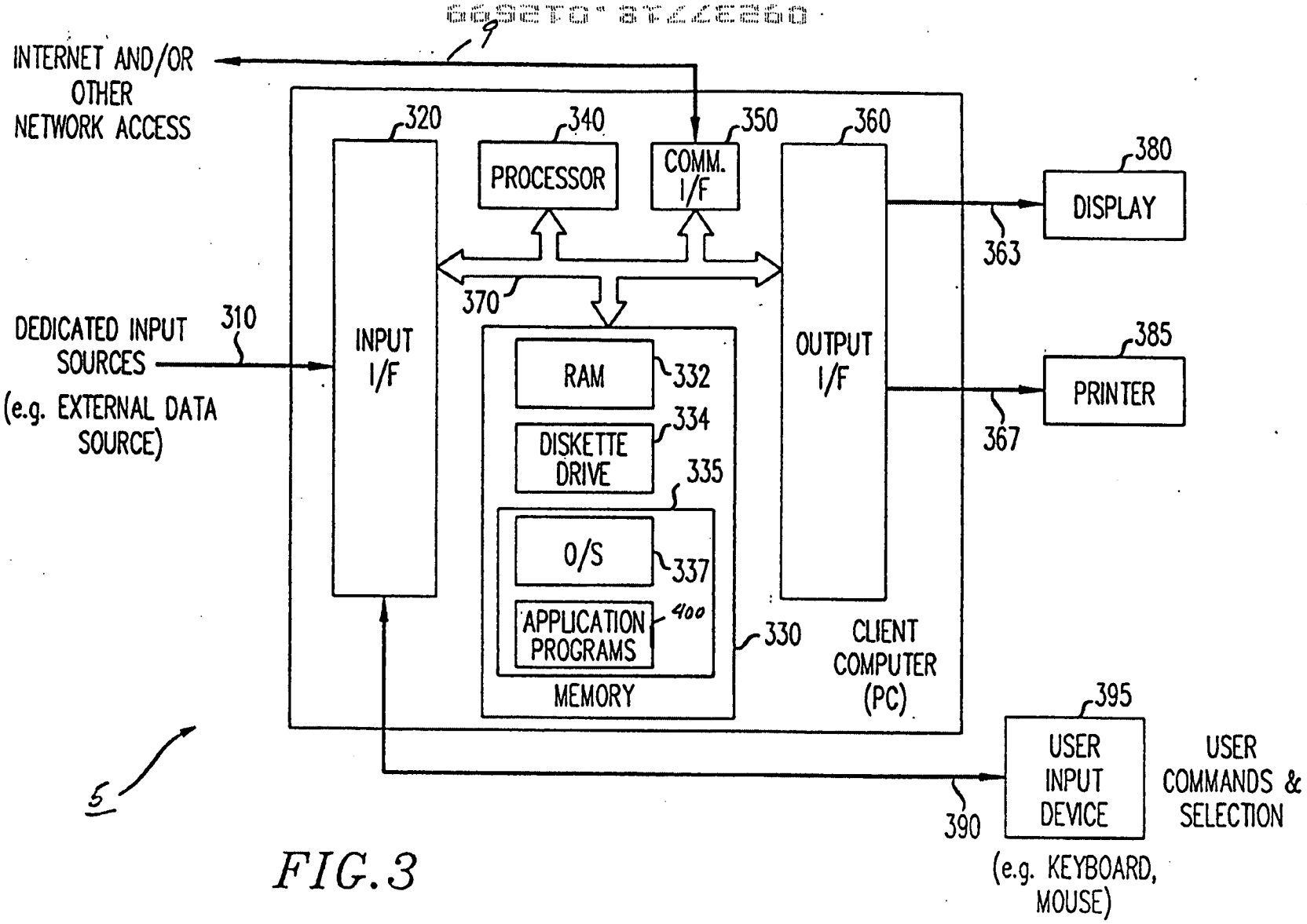

INTERNET AND/OR OTHER NETWORK ACCESS
9
320
340
350
360
380
PROCESSOR
COMM. I/F
DISPLAY
363
370
DEDICATED INPUT SOURCES
(e.g. EXTERNAL DATA SOURCE)
310
INPUT I/F
RAM
332
DISKETTE DRIVE
334
335
O/S
337
APPLICATION PROGRAMS
400
MEMORY
330
OUTPUT I/F
CLIENT COMPUTER (PC)
385
PRINTER
367
395
USER INPUT DEVICE
(e.g. KEYBOARD, MOUSE)
USER COMMANDS & SELECTION
390
5

FIG. 3

09870 "8722260

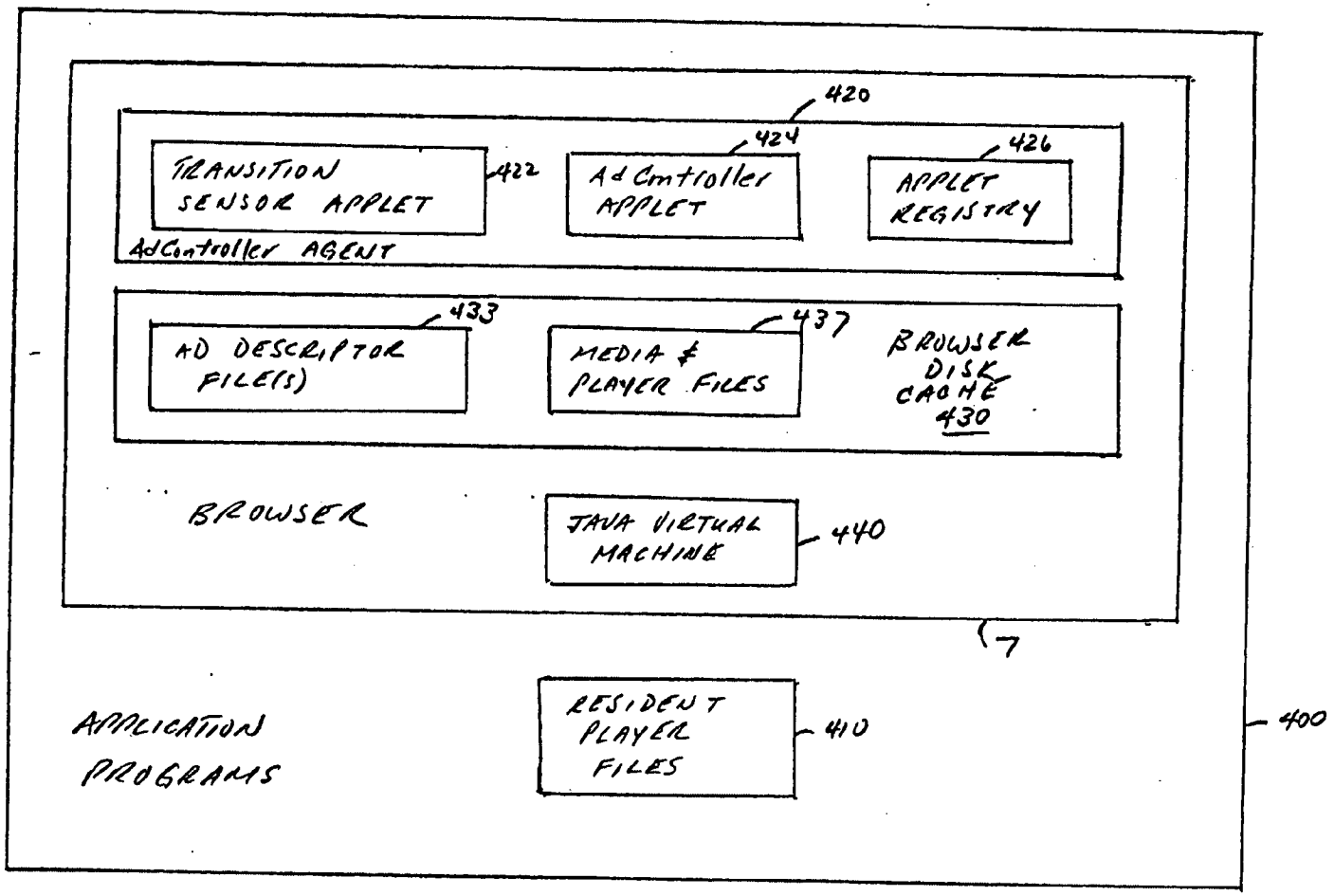


FIG. 4

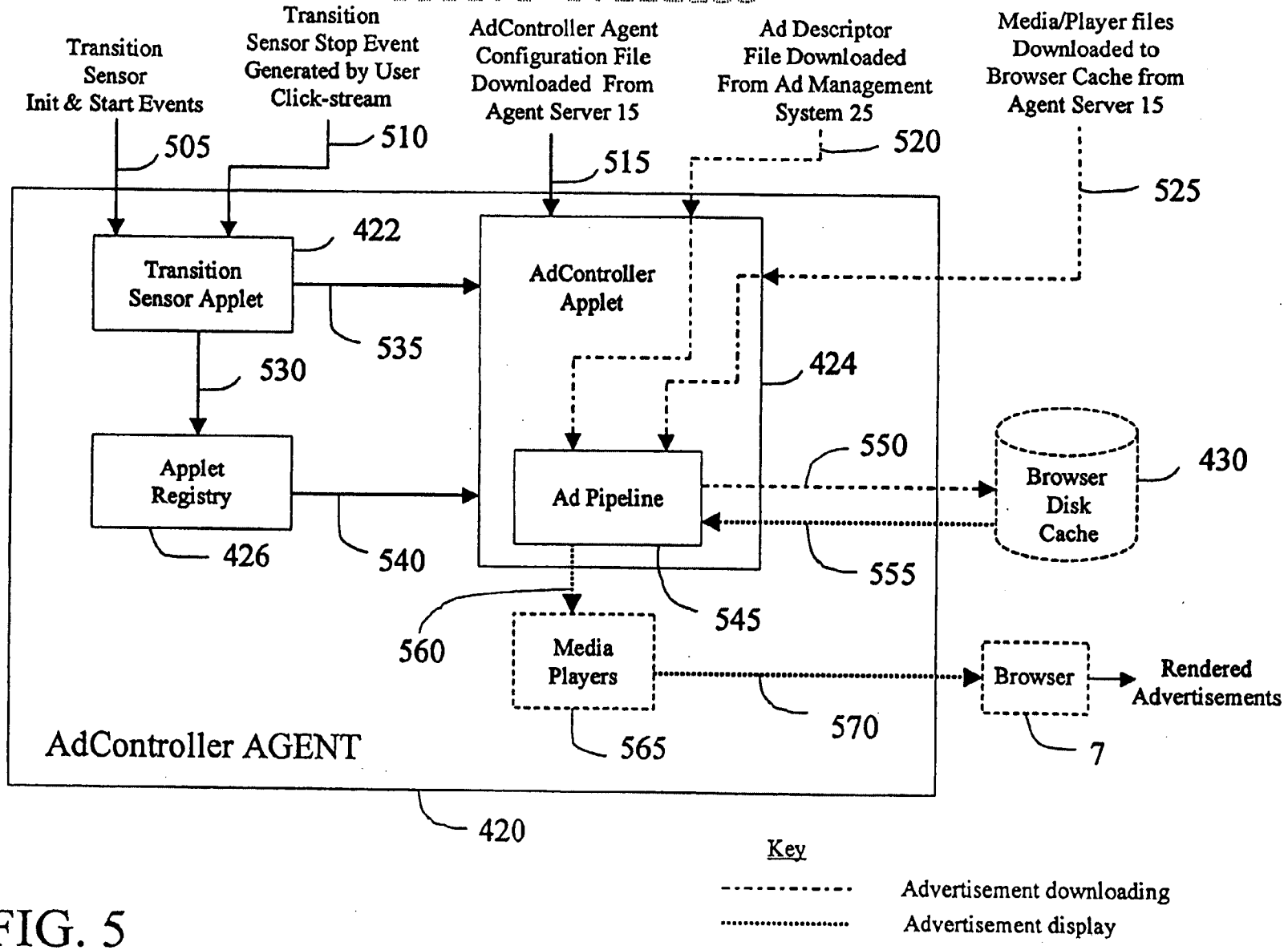

Transition Sensor Init & Start Events
505
Transition Sensor Stop Event Generated by User Click-stream
510
AdController Agent Configuration File Downloaded From Agent Server 15
515
Ad Descriptor File Downloaded From Ad Management System 25
520
Media/Player files Downloaded to Browser Cache from Agent Server 15
525
422
Transition Sensor Applet
535
530
AdController Applet
424
Applet Registry
426
540
Ad Pipeline
550
555
Browser Disk Cache
430
560
545
Media Players
565
570
Browser
7
Rendered Advertisements
AdController AGENT
420
Key
Advertisement downloading
Advertisement display

FIG. 5

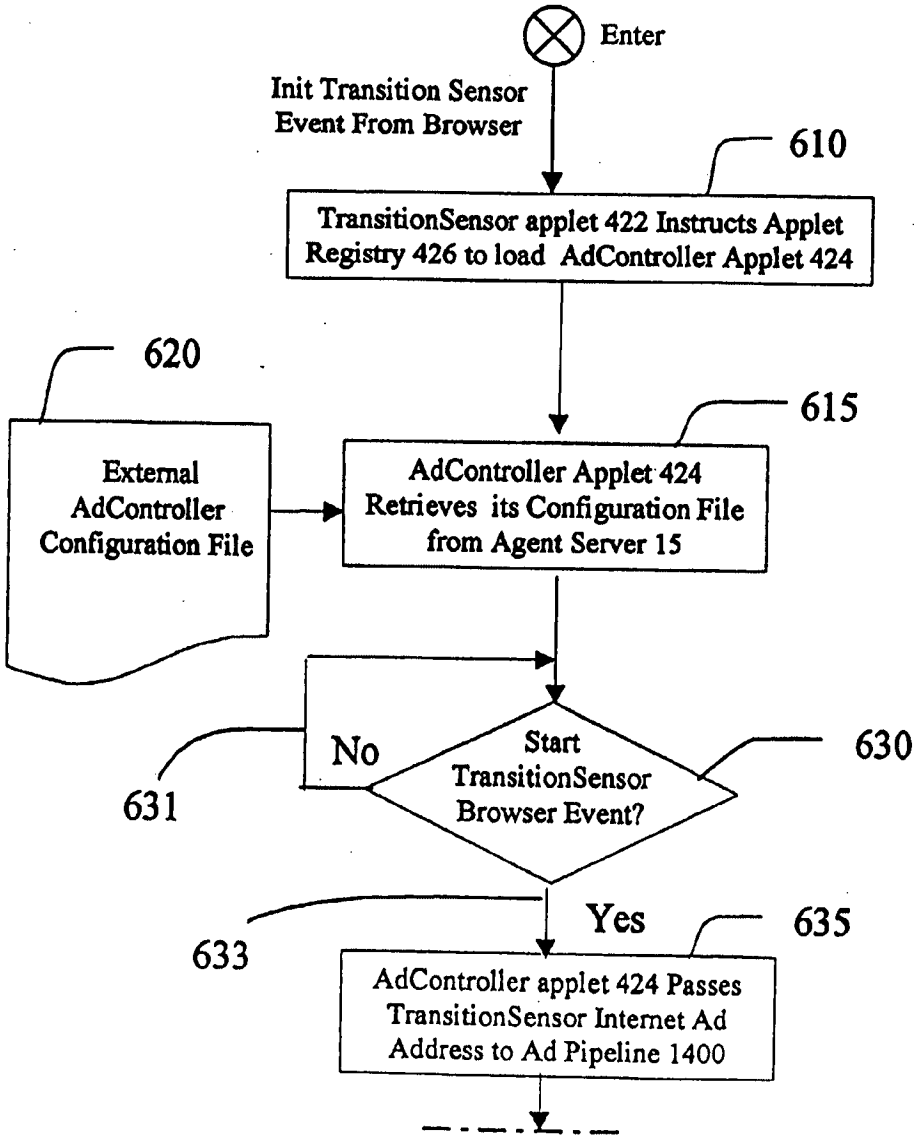


FIG. 6A

AdController AGENT Processing

600

FIG. 6B

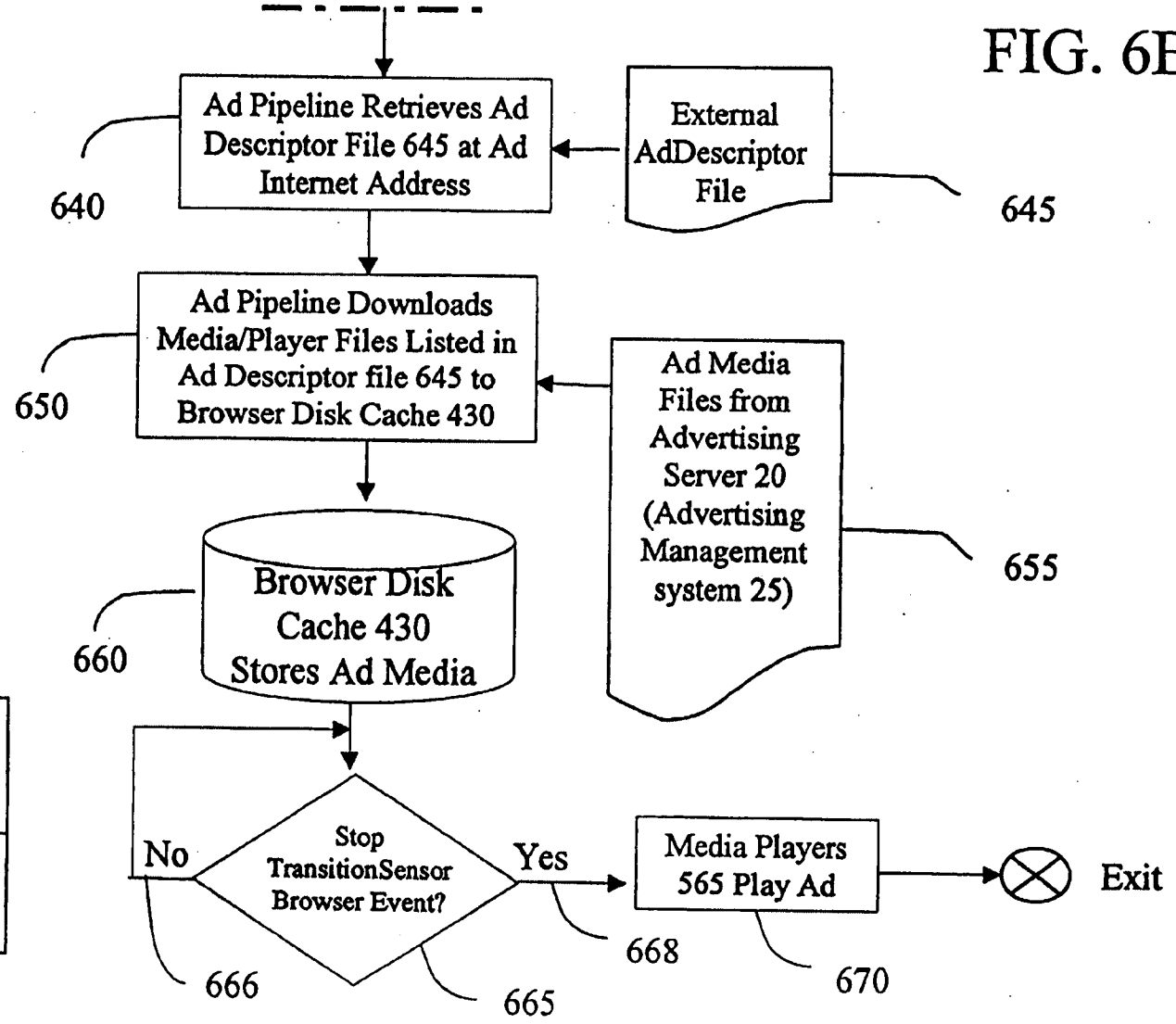
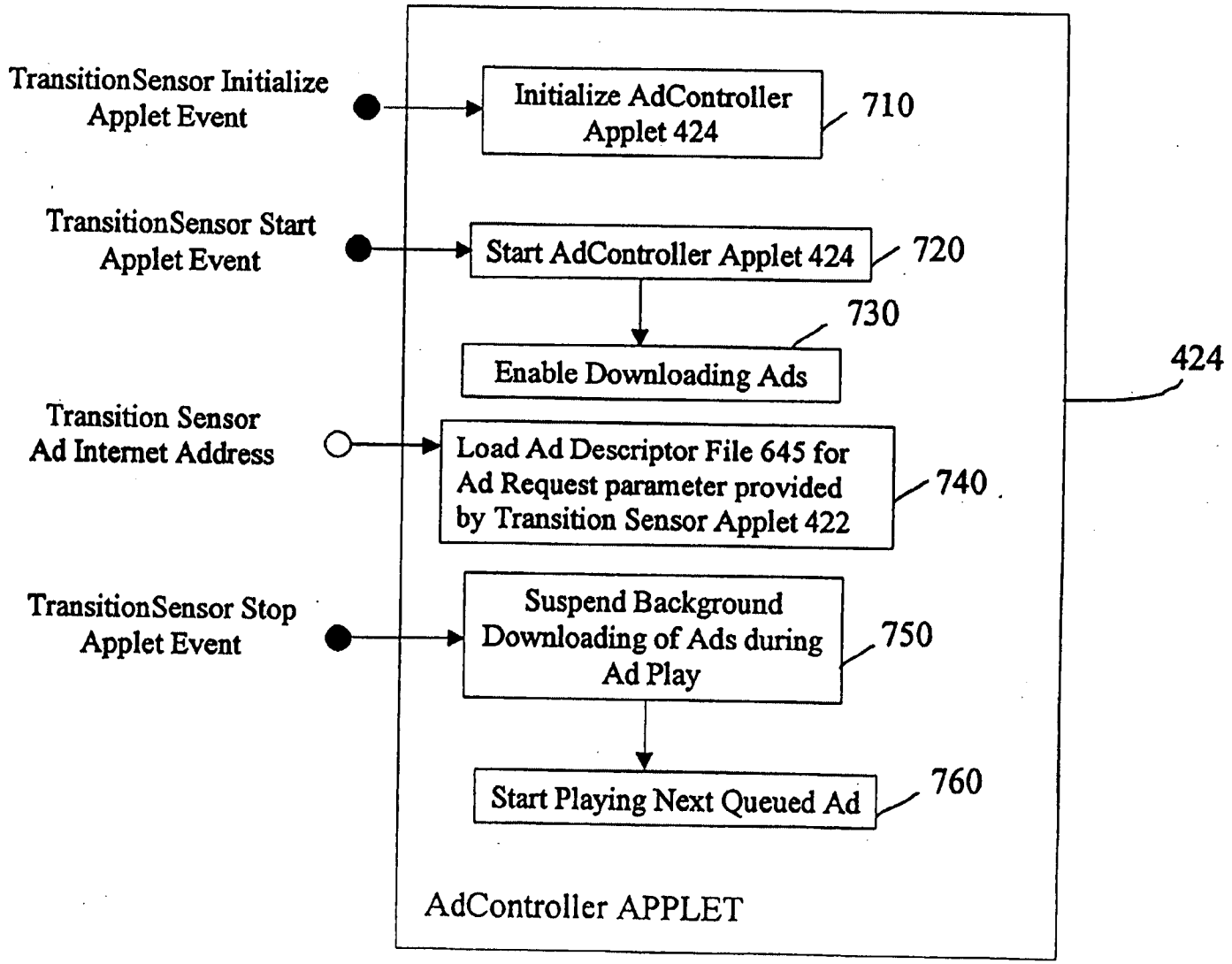


FIG. 6A

FIG. 6B

FIG. 6

FIG. 7


TransitionSensor Initialize Applet Event
Initialize AdController Applet 424
710
TransitionSensor Start Applet Event
Start AdController Applet 424
720
730
Enable Downloading Ads
424
Transition Sensor Ad Internet Address
Load Ad Descriptor File 645 for Ad Request parameter provided by Transition Sensor Applet 422
740
TransitionSensor Stop Applet Event
Suspend Background Downloading of Ads during Ad Play
750
Start Playing Next Queued Ad
760
AdController APPLET

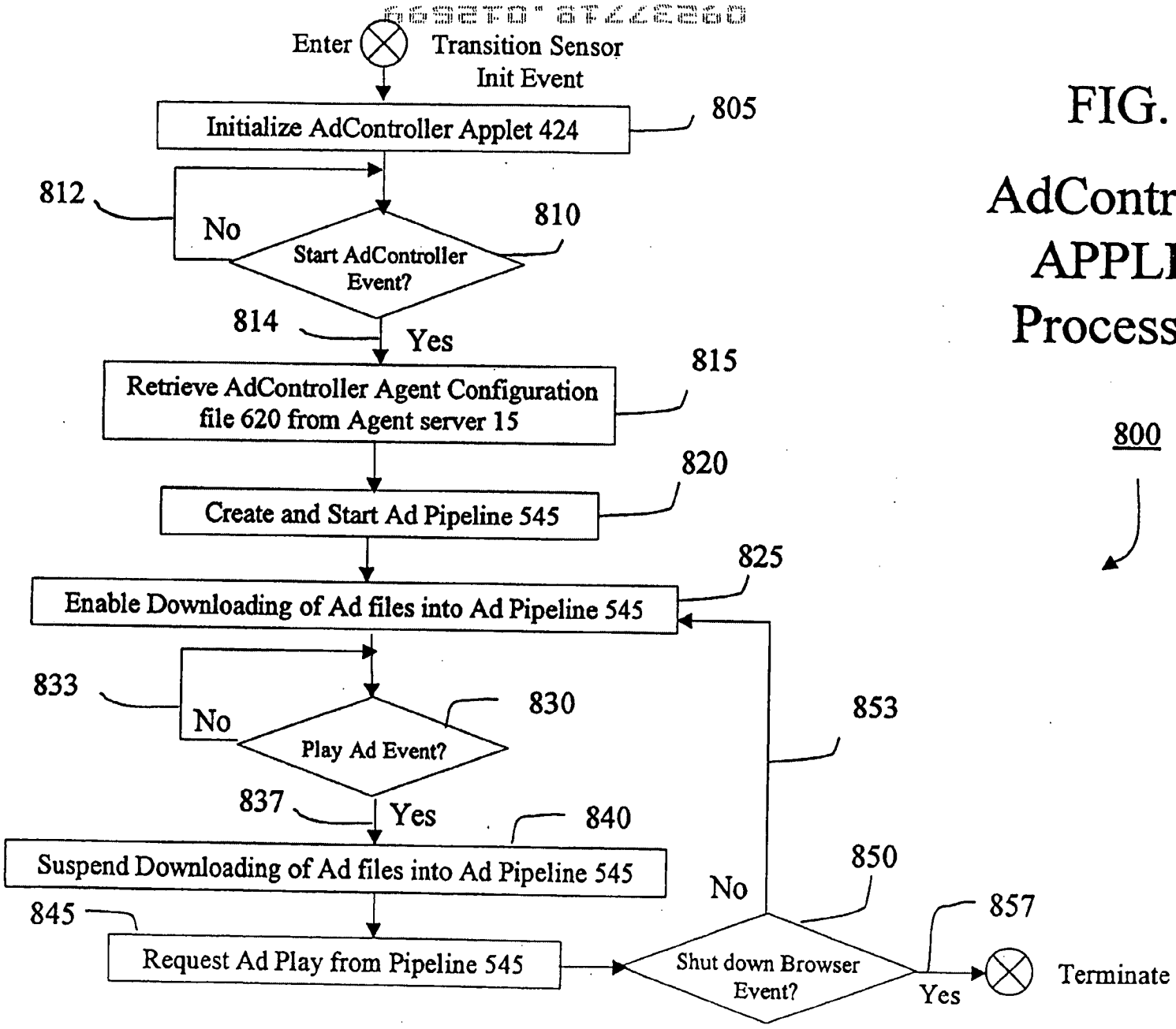
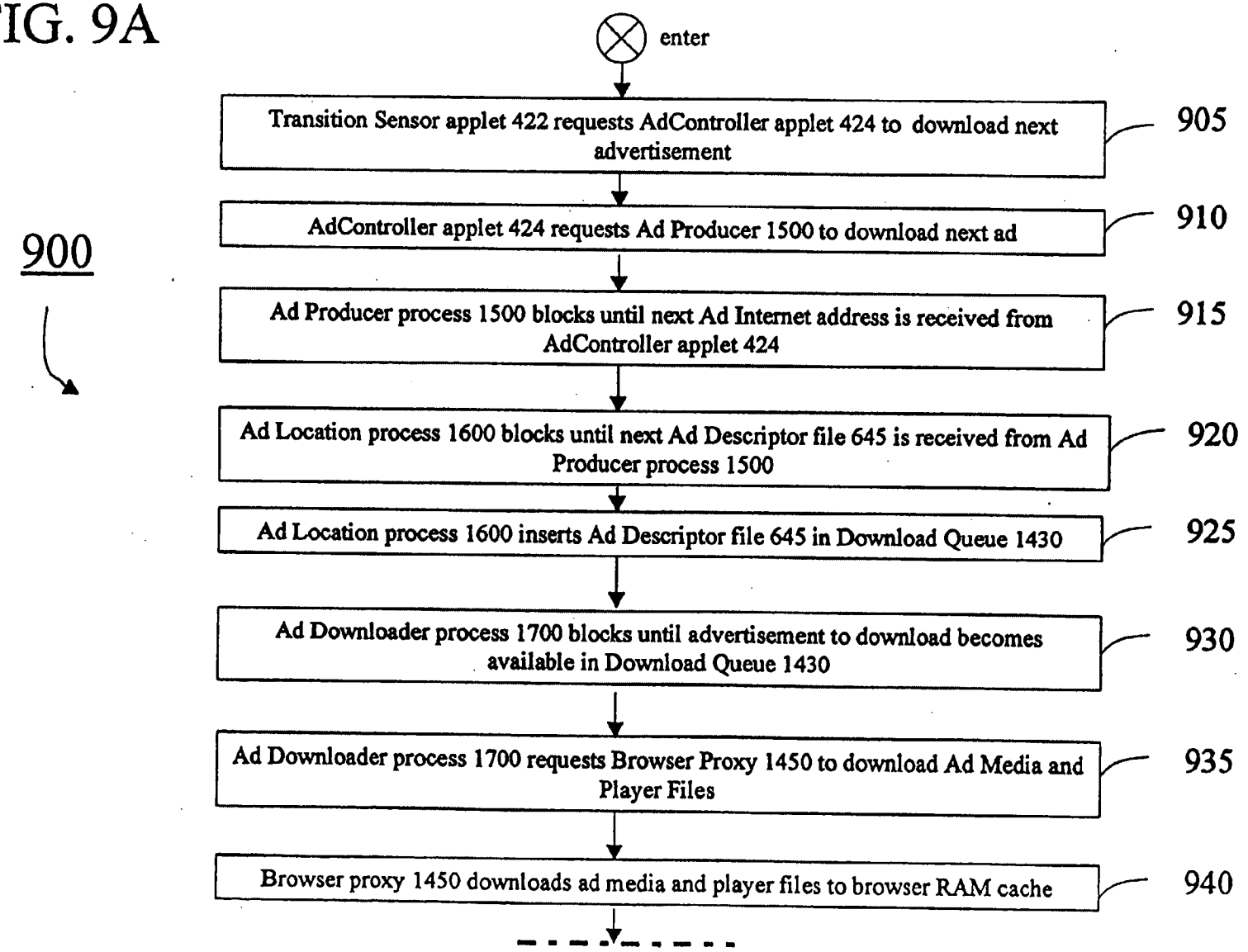


FIG. 8

AdController APPLET Processing

800

FIG. 9A


900
enter
Transition Sensor applet 422 requests AdController applet 424 to download next advertisement
905
AdController applet 424 requests Ad Producer 1500 to download next ad
910
Ad Producer process 1500 blocks until next Ad Internet address is received from AdController applet 424
915
Ad Location process 1600 blocks until next Ad Descriptor file 645 is received from Ad Producer process 1500
920
Ad Location process 1600 inserts Ad Descriptor file 645 in Download Queue 1430
925
Ad Downloader process 1700 blocks until advertisement to download becomes available in Download Queue 1430
930
Ad Downloader process 1700 requests Browser Proxy 1450 to download Ad Media and Player Files
935
Browser proxy 1450 downloads ad media and player files to browser RAM cache
940

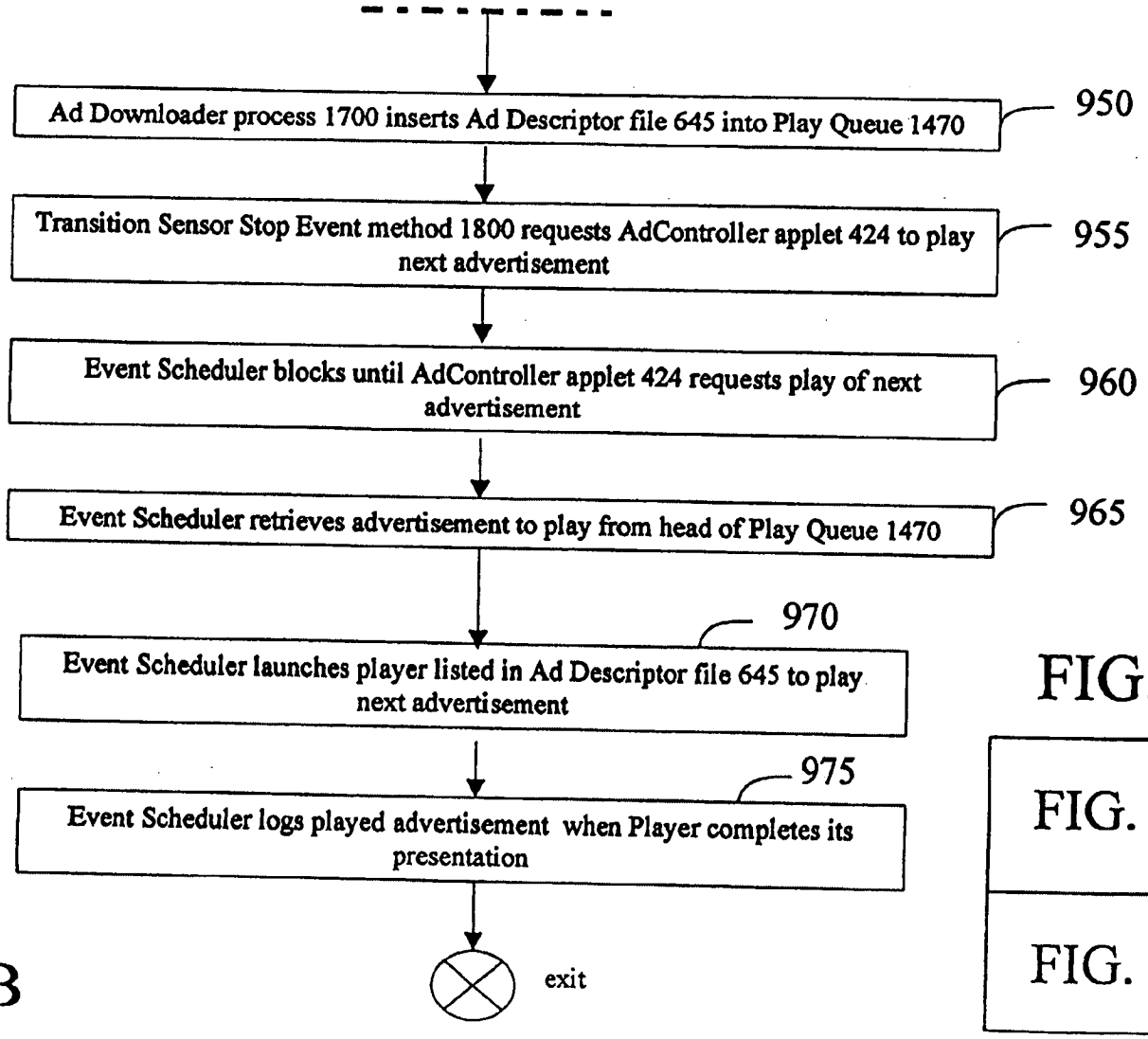


FIG. 9B

FIG. 9

FIG. 9A

FIG. 9B

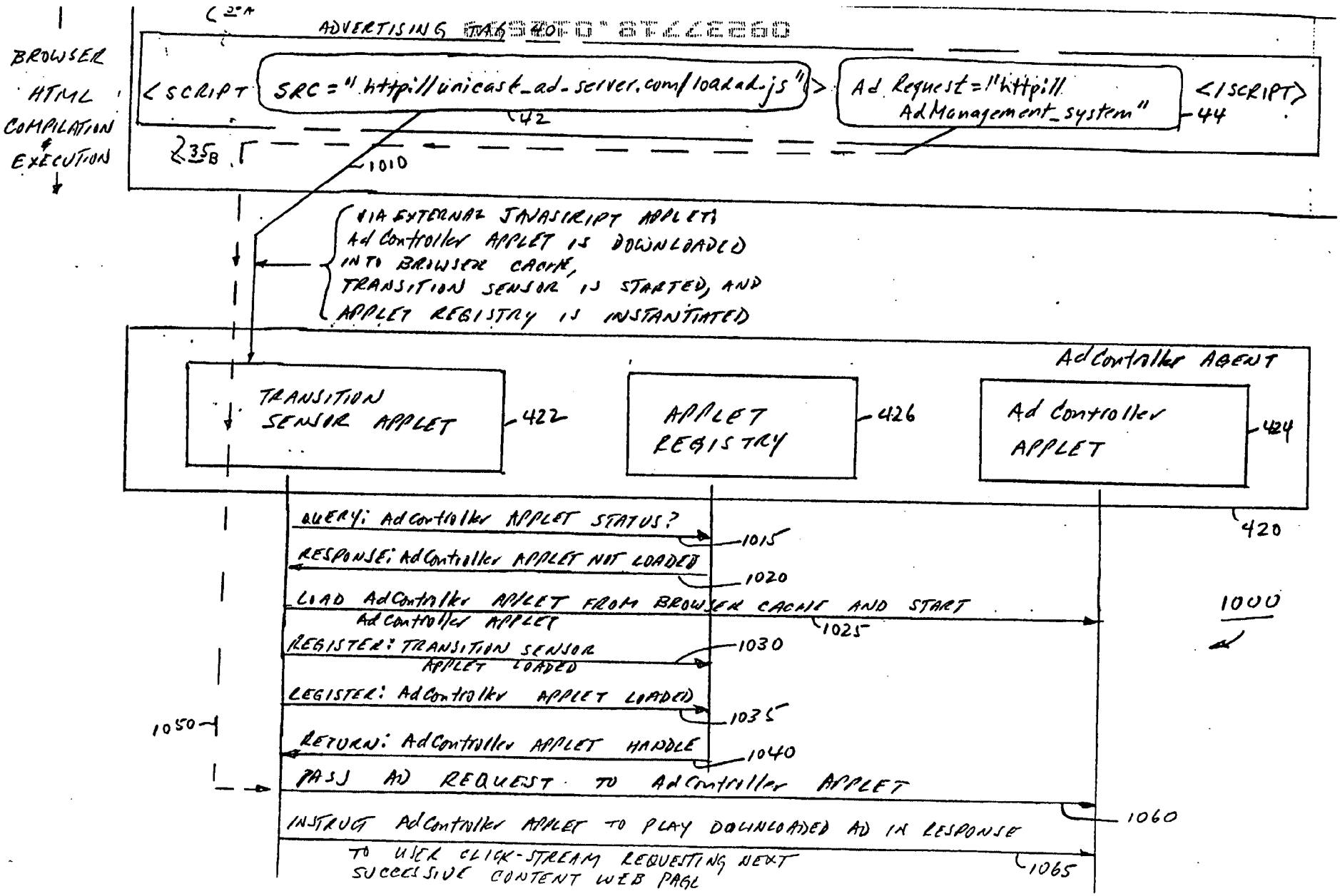

BROWSER HTML COMPILATION & EXECUTION
ADVERTISING TAG
<SCRIPT SRC="http://unicast_ad_server.com/loadad.js"></SCRIPT>
42
<SCRIPT Ad Request="http://AdManagement_system"></SCRIPT>
44
235B
1010
VIA EXTERNAL JAVASCRIPT APPLET, Ad Controller APPLET IS DOWNLOADED INTO BROWSER CACHE, TRANSITION SENSOR IS STARTED, AND APPLET REGISTRY IS INSTANTIATED
AdController AGENT
TRANSITION SENSOR APPLET
422
APPLET REGISTRY
426
Ad Controller APPLET
424
420
QUERY: AdController APPLET STATUS?
1015
RESPONSE: AdController APPLET NOT LOADED
1020
LOAD AdController APPLET FROM BROWSER CACHE AND START AdController APPLET
1025
1000
REGISTER: TRANSITION SENSOR APPLET LOADED
1030
LEGISTER: AdController APPLET LOADED
1035
1050
RETURN: AdController APPLET HANDLE
1040
PASS AD REQUEST TO AdController APPLET
INSTRUCT AdController APPLET TO PLAY DOWNLOADED AD IN RESPONSE TO USER CLICK-STREAM REQUESTING NEXT SUCCESSIVE CONTENT WEB PAGE
1060
1065

FIG. 10

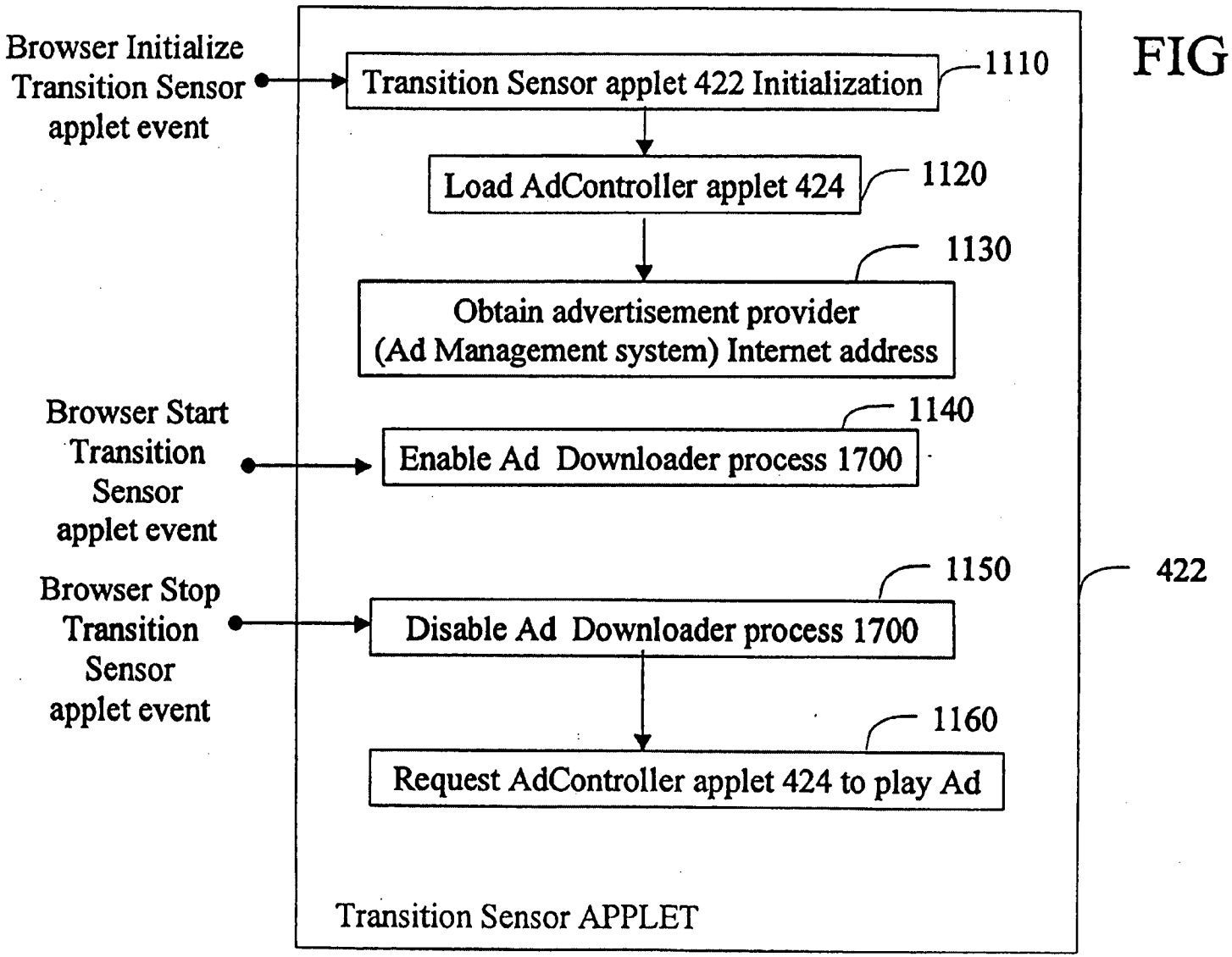
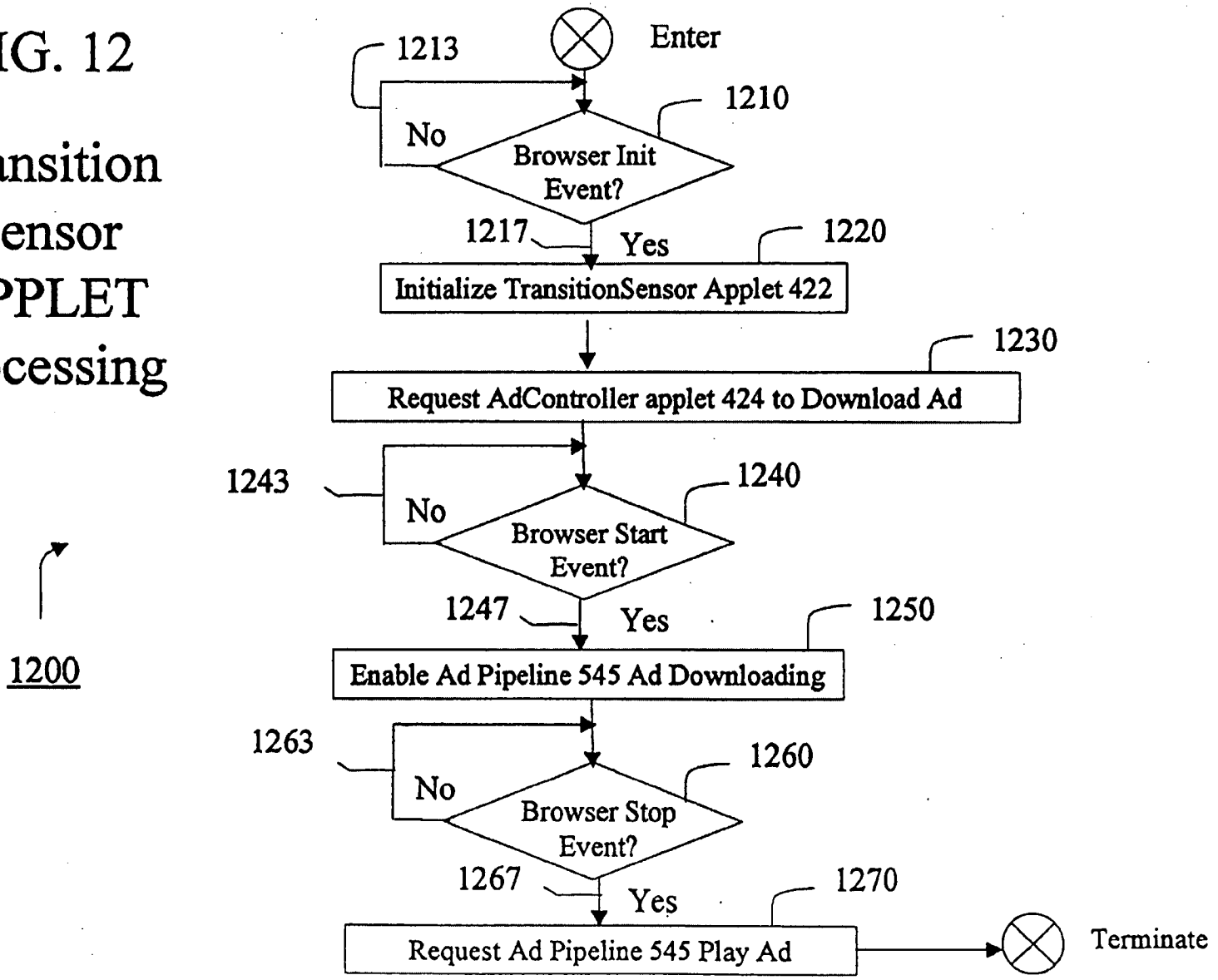

Browser Initialize Transition Sensor applet event
Transition Sensor applet 422 Initialization
1110
Load AdController applet 424
1120
1130
Obtain advertisement provider (Ad Management system) Internet address
Browser Start Transition Sensor applet event
1140
Enable Ad Downloader process 1700
Browser Stop Transition Sensor applet event
1150
Disable Ad Downloader process 1700
1160
Request AdController applet 424 to play Ad
422
Transition Sensor APPLET

FIG. 11

FIG. 12

Transition Sensor APPLET Processing



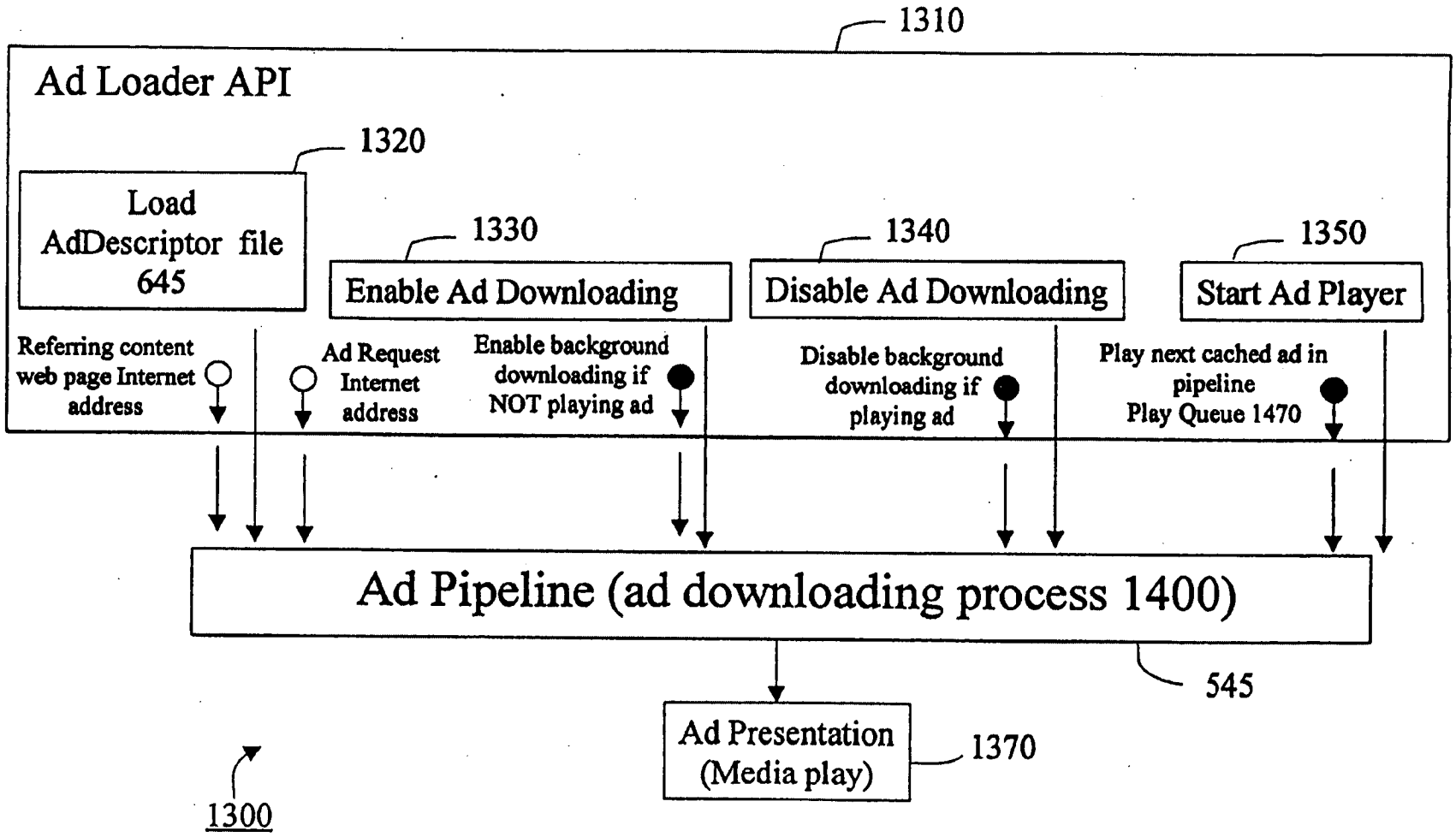
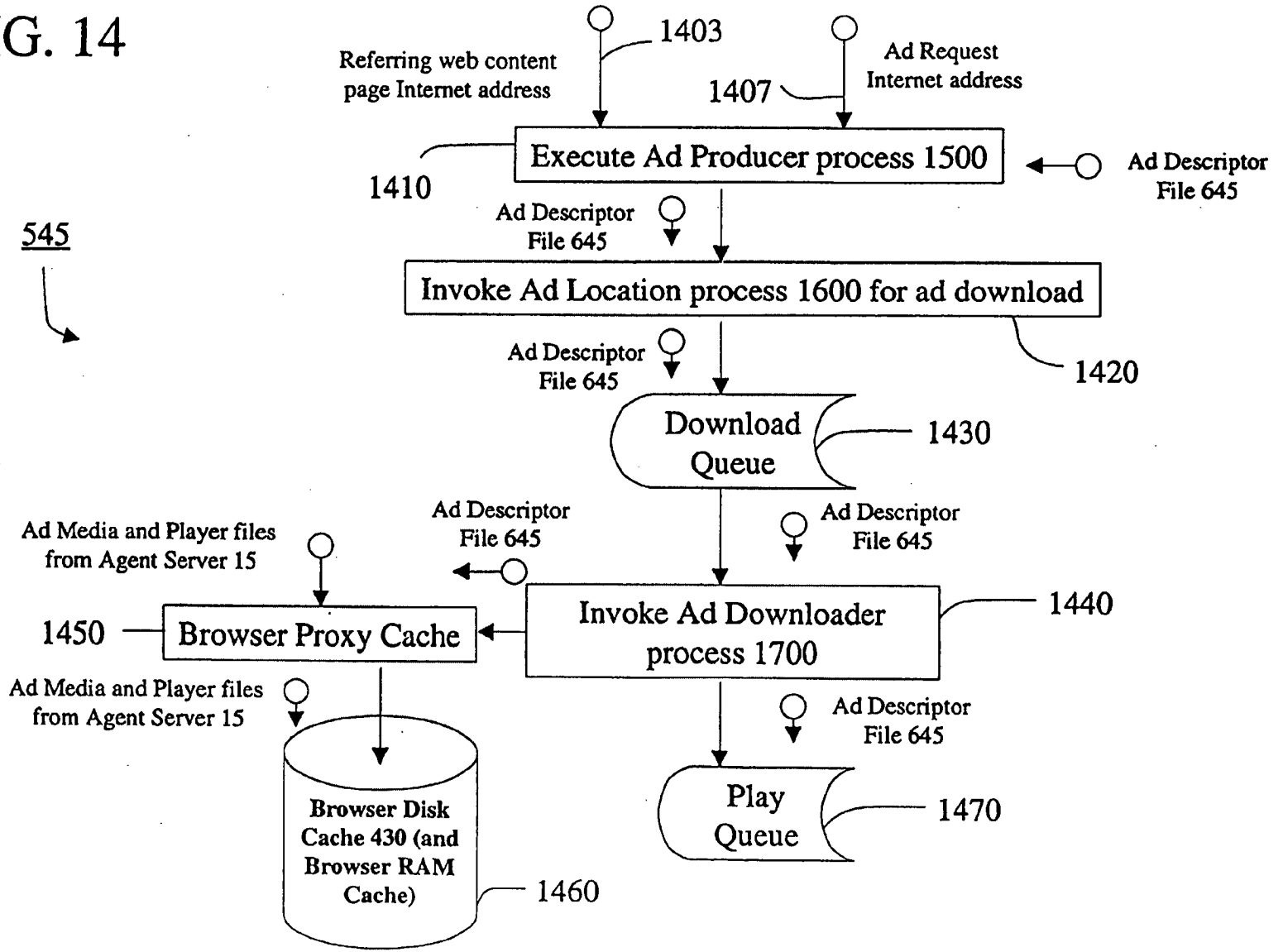

1310
Ad Loader API
1320
Load AdDescriptor file 645
1330
Enable Ad Downloading
1340
Disable Ad Downloading
1350
Start Ad Player
Referring content web page Internet address
Ad Request Internet address
Enable background downloading if NOT playing ad
Disable background downloading if playing ad
Play next cached ad in pipeline Play Queue 1470
Ad Pipeline (ad downloading process 1400)
545
Ad Presentation (Media play)
1370
1300

FIG. 13

FIG. 14


545
Referring web content page Internet address
1403
Ad Request Internet address
1407
Execute Ad Producer process 1500
1410
Ad Descriptor File 645
Ad Descriptor File 645
Invoke Ad Location process 1600 for ad download
1420
Ad Descriptor File 645
Download Queue
1430
Ad Descriptor File 645
Ad Descriptor File 645
Ad Media and Player files from Agent Server 15
1450
Browser Proxy Cache
Invoke Ad Downloader process 1700
1440
Ad Media and Player files from Agent Server 15
Ad Descriptor File 645
Browser Disk Cache 430 (and Browser RAM Cache)
1460
Play Queue
1470

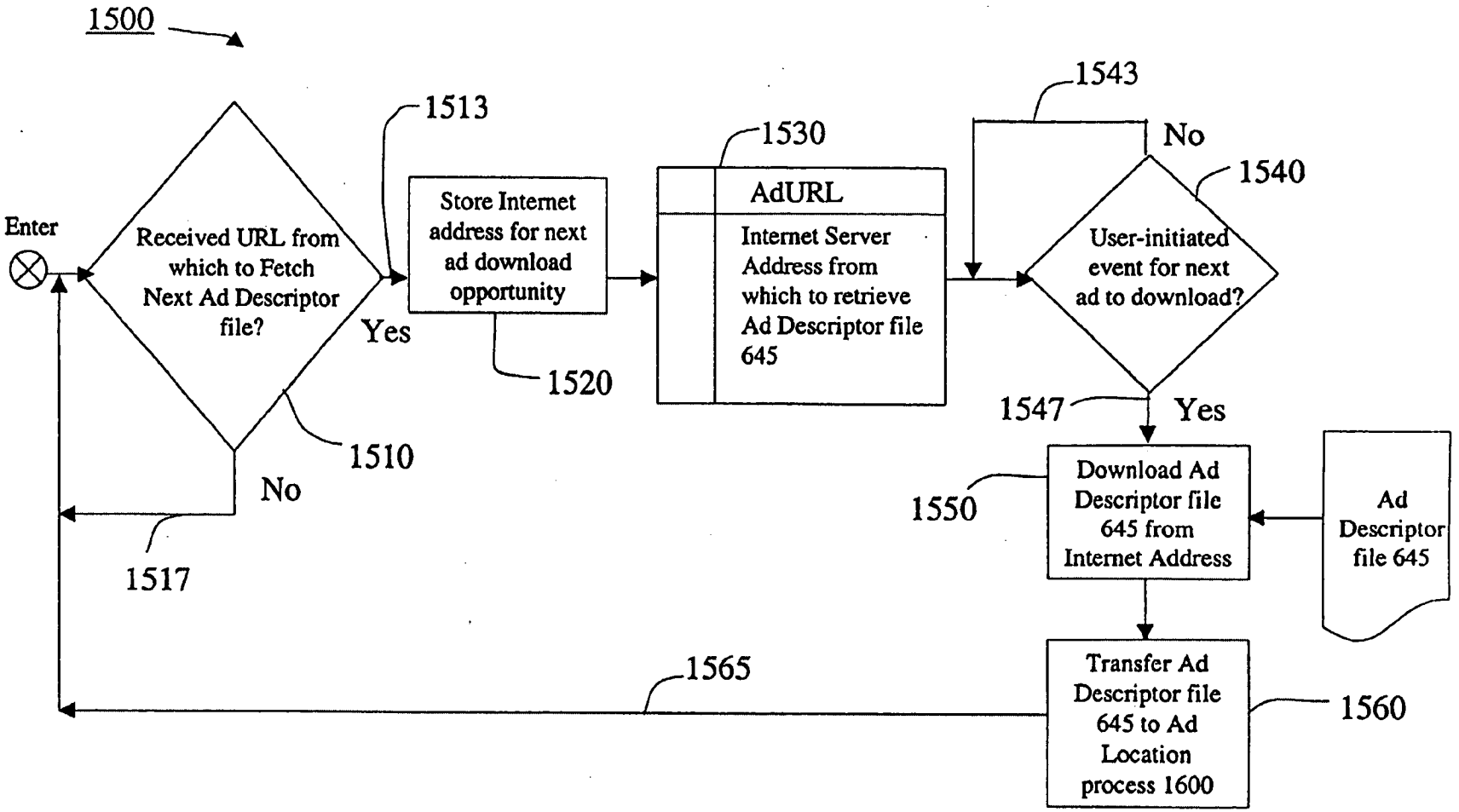
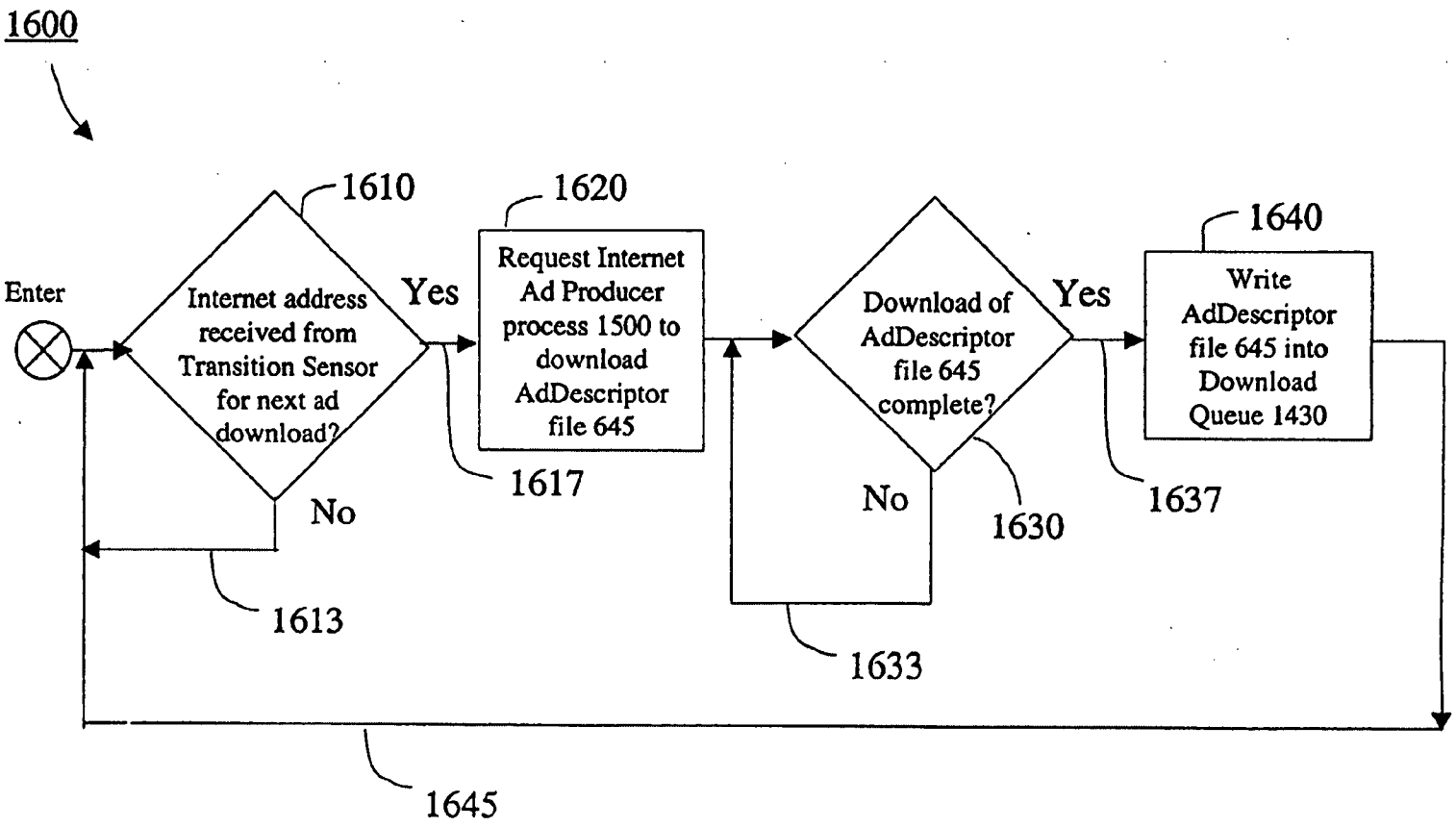


FIG. 15 - Ad Producer Process

FIG. 16 - Ad Location Process



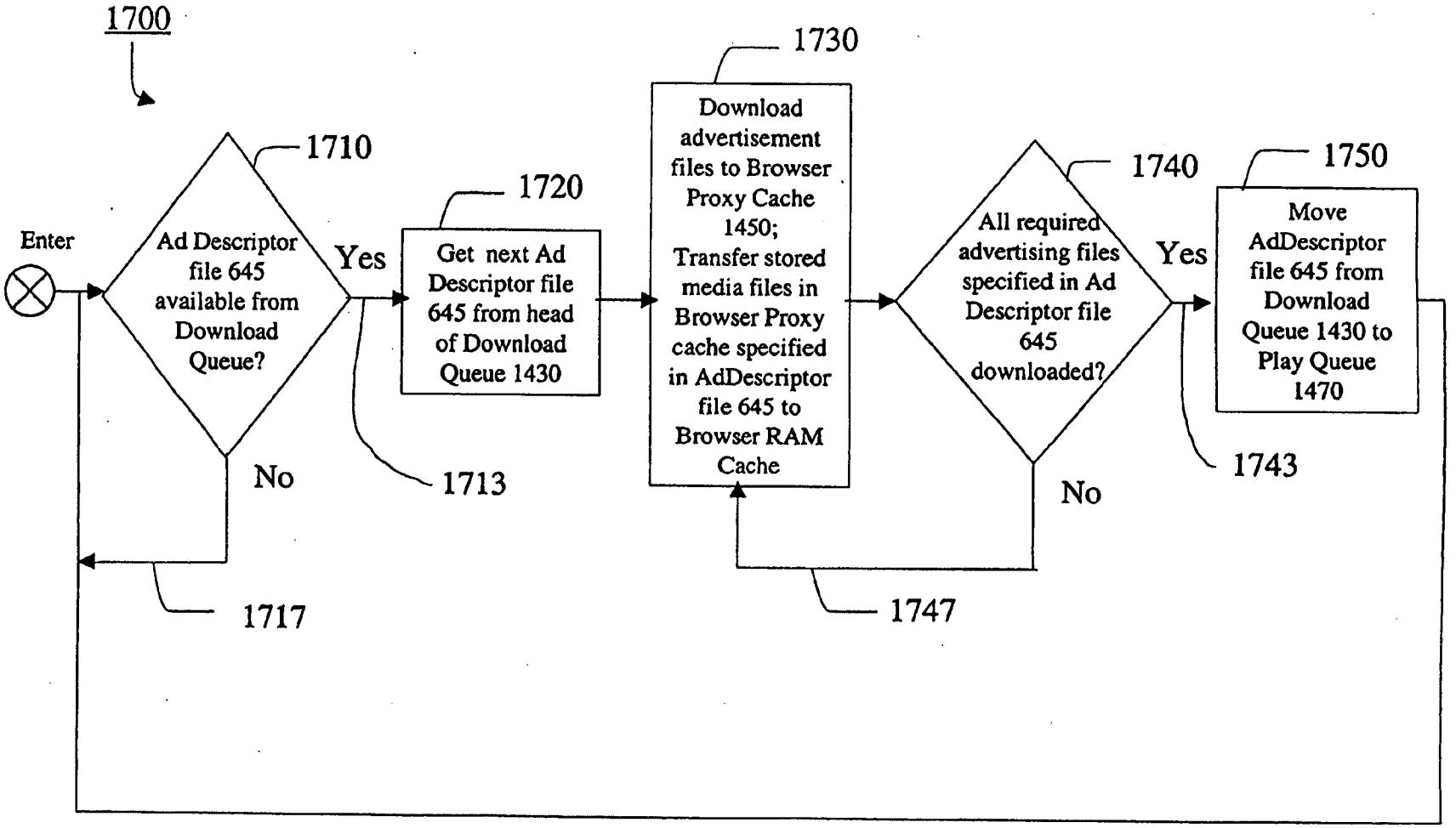


FIG. 17 - Ad Downloader Process

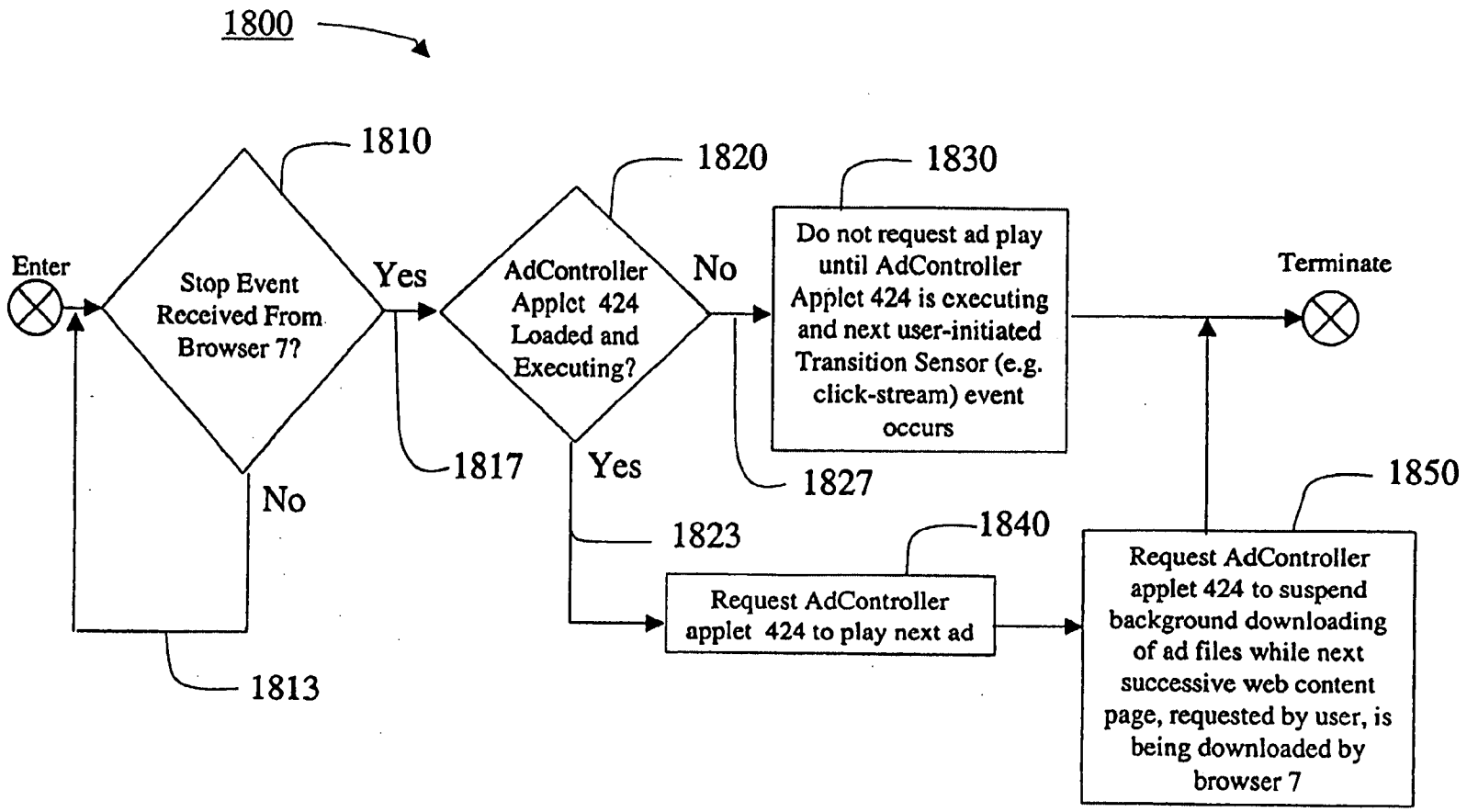


FIG. 18 - Transition Sensor Stop Method

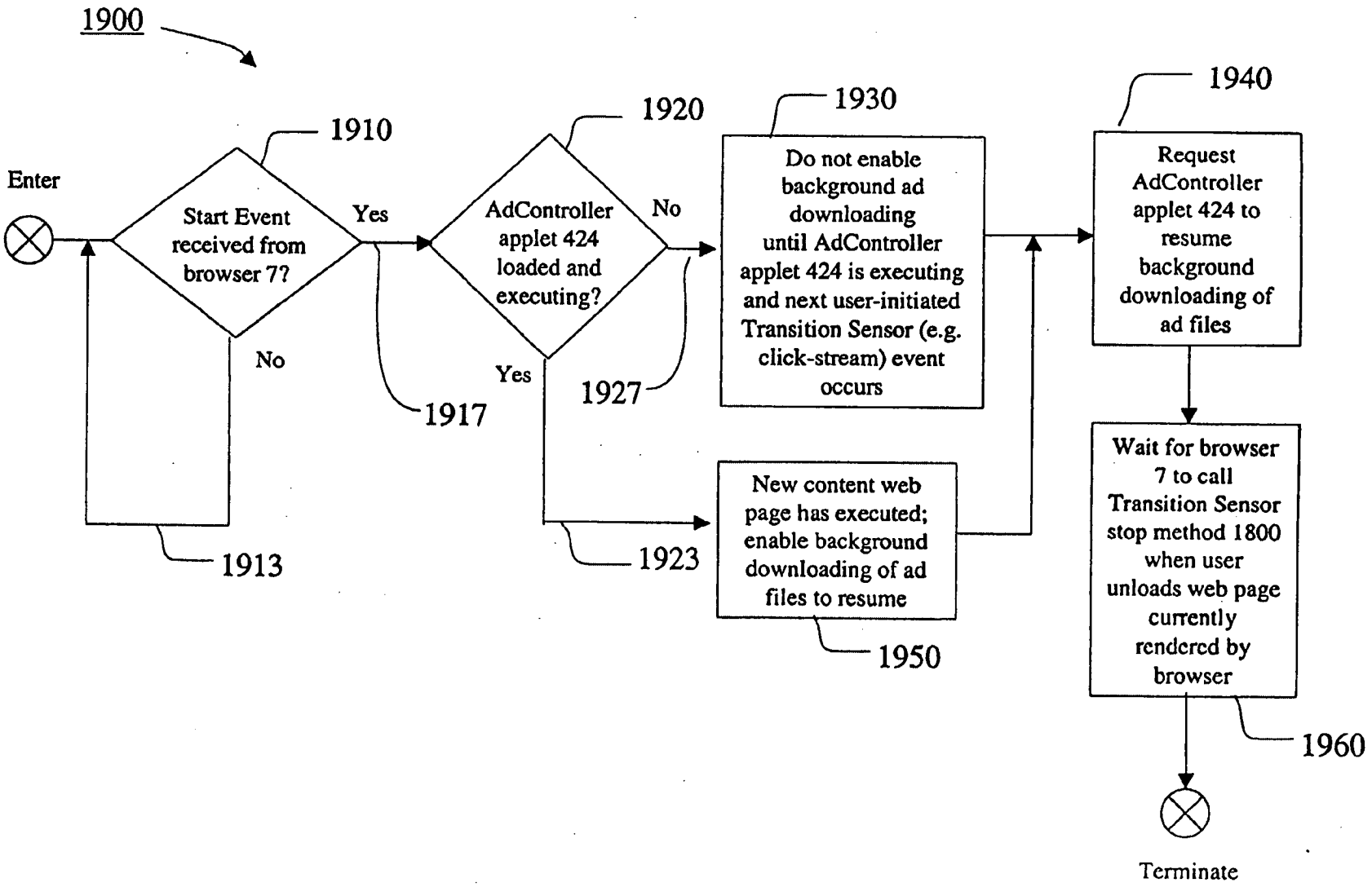


FIG. 19 - Transition Sensor Start Method

~ 2000

```
# Section 1 - Applet Player Java Class Configuration
playerName=AppletViewerPopup
playerClass=com.unicast.adcontroller.players.AppletViewerPopup

# Section 2 - Ad Java Classes Configuration
AppletViewerPopup.adAppletName=ANM_AnimationLoaderApplet
AppletViewerPopup.adAppletClass=
com.pointcast.applets.AnimationApplet.ANM_AnimationLoaderApplet

# Section 3 - Player Execution Configuration
AppletViewerPopup.windowTitle=AdController PointCast Ad
AppletViewerPopup.playerRefreshRate=1000
AppletViewerPopup.allowExit=true
AppletViewerPopup.xPosition=50
AppletViewerPopup.yPosition=50
AppletViewerPopup.windowWidth=280
AppletViewerPopup.windowHeight=355
AppletViewerPopup.isResizable=false
AppletViewerPopup.secondsWindowIsOpen=180
AppletViewerPopup.secondsToOverlay=1
AppletViewerPopup.closeButtonLabel=Close
AppletViewerPopup.openButtonLabel=More Info
AppletViewerPopup.saveButtonLabel=Save
AppletViewerPopup.openURL=http://www.pointcast.com/

# Section 4 - Ad Applet Configuration

# A. Ad Applet DocumentBase
AppletViewerPopup.ANM_AnimationLoaderApplet.documentBase=
http://www2.unicast.com/~rlandsma/AdController/MacromediaApplet/

# B. Ad Applet Parameters
AppletViewerPopup.ANM_AnimationLoaderApplet.AdToPlay=deepsea.anm
AppletViewerPopup.ANM_AnimationLoaderApplet.AltImage=test.gif
AppletViewerPopup.ANM_AnimationLoaderApplet.MaxCycles=5
AppletViewerPopup.ANM_AnimationLoaderApplet.TargetURL=http://www.pointcast.com/
AppletViewerPopup.ANM_AnimationLoaderApplet.TargetFrame=_top
AppletViewerPopup.ANM_AnimationLoaderApplet.BorderWidth=2
AppletViewerPopup.ANM_AnimationLoaderApplet.BorderType=Standard

# C. Ad Applet MediaList
AppletViewerPopup.ANM_AnimationLoaderApplet.mediaURLList=new
AppletViewerPopup.ANM_AnimationLoaderApplet.mediaURLList.size=2
AppletViewerPopup.ANM_AnimationLoaderApplet.mediaURLList.element0=deepsea.anm
AppletViewerPopup.ANM_AnimationLoaderApplet.mediaURLList.element0=animApplet.jar
```

FIG. 20 - ILLUSTRATIVE AD DESCRIPTOR FILE CONTENTS FOR A POINTCAST JAVA AD